



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

09/196,680

11/20/1998

STEPHEN J. MEYER

16114:E (-003US)

9428

60708

7590

07/20/2009

FOR: TYCO FIRE SUPPRESSION & BUILDING PRODUCTS
PERKINS COIE LLP
607 Fourteenth Street, NW
Washington, DC 20005-2003

EXAMINER

KIM, CHRISTOPHER S

ART UNIT

PAPER NUMBER

3752

MAIL DATE

DELIVERY MODE

07/20/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 09/196,680	Applicant(s) MEYER ET AL.	
	Examiner Christopher S. Kim	Art Unit 3752	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 May 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11, 14, 15 and 20-74 is/are pending in the application.
- 4a) Of the above claim(s) 55-61 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11, 14, 15, 20-54 and 62-74 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 November 1998 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 9, 2009 has been entered.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "upper face portion...lower face portion...first linear portion...second linear portion" recited in claim 1 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure

number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

4. Claims 67, 72-73 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 67 and 72-73 recite “...the deflector consisting of a single opening...” The disclosure, as originally filed, discloses the face portion having at least two openings. The first opening is between the face portion 42 and canopy portion 44. The second opening of deflector 40 is mounted over boss 26b.

5. Claims 1-11, 14, 15, 62, 65-74 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the peripheral edge defining the lower face portion including a first linear portion that extends parallel to the vertical plane and a second linear portion that extends parallel to the horizontal plane" in lines 16-18. It is uncertain whether the peripheral edge includes the first and second linear portions or the lower face portion includes the first and second linear portions.

Claim 65 recites the limitation "the means for transforming and delivering" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

Claim 66 recites the limitation "the means for transforming and delivering" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

Claim 67 recites the limitation "the means for transforming and delivering" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

Claim 67 recites the closed ended transitional phrase "the deflector consisting of" in line 5. The claim further recites "includes" in line 6.

Claim 68 recites the limitation "the means for transforming and delivering" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

Claim 69 recites the limitation "the means for transforming and delivering" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

Claim 70 recites the limitation "the means for transforming and delivering" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

Claim 71 recites the limitation "the means for transforming and delivering" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

Claim 72 recites the limitation "the means for transforming and delivering" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

Claim 72 recites the closed ended transitional phrase "the deflector consisting of" in line 4. The claim further recites "having" in line 4.

Claim 73 recites the limitation "the means for transforming and delivering" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

Claim 73 recites the closed ended transitional phrase "the deflector consisting of" in line 4. The claim further recites "having" in line 4.

Claim 74 recites the limitation "the means for transforming and delivering" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

6. Claims 1-11, 14, 15, 20-54, 62 and 64-74 (as best understood) are rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer (4,296,816) in view of Tramm (5,810,263).

Fischer discloses a sprinkler comprising: a generally tubular body 30 having a central passageway 31, a closure 40, a trigger 44, a deflector 38; a face portion 76; a canopy portion 62; two frame arms 34; two support arms (no reference numbers); a single flow opening 79. Fischer teaches the use of a deflector 38 shaped and positioned to transform a horizontal flow of water into a spray pattern of droplets

Art Unit: 3752

dispersed over a generally horizontal, rectangularly-shaped coverage area (see figures 1 and 6). The coverage area may be up to 16 ft x 24 ft (see column 3 lines 55-58).

Fischer discloses, in column 4, lines 33-37, canopy 62 was tested with: channel 90; channel 90 removed; and entire canopy 62 flat. Fischer discloses that with channel 90 cut away along boundary 95, "the sprinkler performed much the same as it did with no channel and an entirely flat confining element." Additionally, the claims recite a "linear profile." Fischer discloses a linear profile in figure 4.

Tramm discloses, in column 5, lines 12-14, a horizontal-type fire protection sprinkler having a K-factor of at least 3.5, or at least 5.0, or at least 7.0, or at least 10.5, or at least 13.0. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have provided the sprinkler of Fischer with the range of K-factors (greater than 9) as taught by Tramm to provide a specific flow rate depending on pressure.

The device of Fischer in view of Tramm discloses the claimed limitation with the exception of the water flow rate and coverage area being at a height of only three feet below the canopy portion of the deflector. Fischer in view of Tramm discloses the structural limitations, K-factors including the relationship between flow rates and pressures, and the coverage area. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have positioned the sprinkler of Fischer in view of Tramm three feet above the coverage area to extinguish fires in three feet high compartments.

Fischer discloses the limitations of the claimed invention with the exception of the liquid filled glass bulb. Tramm discloses, pictorially, in figure 2, a liquid filled glass bulb 20. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have replaced the trigger of Fischer with the trigger (liquid filled glass bulb) of Tramm to eliminate the need for solder.

Fischer discloses, in column 3, lines 55-58, a coverage area of 16 ft x 24 ft (using a deflector comprising a generally planar face portion and a canopy portion, see figure 2). It would have been obvious to a person of ordinary skill in the art at the time the invention was made that the coverage area is dependent on the fluid pressure, and therefore, any coverage area less than 16 ft x 24 ft can be attained by reducing the pressure (or increasing the K-factor which results in a lower pressure as defined by the formula in column 5, lines 30-38 of Tramm). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have adjusted the coverage area depending on the size of the room, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

The functional recitation "...and when the sidewall fire sprinkler is paired with an identical sidewall fire sprinkler mounted approximately sixteen feet apart on a generally planar wall surface with a collection area of approximately sixteen feet between the sprinklers and sixteen feet away from one of the sprinklers, the collection area located at either one of a distance of about thirty-six inches and a distance of approximately six feet and 7.5 inches below each of the sidewall fire sprinklers so that water is delivered

to the collection area at an average density of about 0.15 gallons per minute per square feet” merely recites the ability to so perform. The device of Fischer in view of Tramm discloses the structural limitations of applicant’s claimed invention, and therefore, it too has the capability to so perform.

While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. MPEP 2114.

Regarding claim 64, the recitation “means for dispersing” fails to invoke means plus function under 35 U.S.C. 112, sixth paragraph because it fails the third prong of the three prong analysis outlined in MPEP 2181.

7. Claim 63 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer (4,296,816) in view of Tramm (5,810,263), Pieczykolan (H121), and Bosio et al. (5,727,737).

Fischer discloses a sprinkler comprising: a generally tubular body 30 having a central passageway 31; a frame arms 34, a closure 40, a trigger 44, a deflector 38; a face portion 76; a canopy portion 62. Fischer teaches the use of a deflector 38 shaped and positioned to transform a horizontal flow of water into a spray pattern of droplets dispersed over a generally horizontal, rectangularly-shaped coverage area (see figures 1 and 6). The coverage area may be up to 16 ft x 24 ft (see column 3 lines 55-58).

Fischer discloses, in column 4, lines 33-37, canopy 62 was tested with: channel 90; channel 90 removed; and entire canopy 62 flat. Fischer discloses that with channel

Art Unit: 3752

90 cut away along boundary 95, "the sprinkler performed much the same as it did with no channel and an entirely flat confining element."

Fischer differs from what is being claimed in the trigger 44 being a liquid-filled glass bulb and the tubular body having a K factor greater than 9.

Regarding the liquid-filled glass bulb, Bosio teaches, in column 2, lines 38-33, that glass bulb containing heat-expandable liquid and fusible solder element are interchangeable. Pieczykolan teaches a spring washer and bulb design such that thinner walled and faster acting glass bulbs may be employed to ensure quicker release. See Pieczykolan column 3, lines 49-68. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have provided the sprinkler of Fischer with the bulb design of Pieczykolan to ensure quicker release.

Regarding the tubular body having a K factor greater than 9, Tramm discloses, in column 5, lines 12-14, a horizontal-type fire protection sprinkler having a K-factor of at least 3.5, or at least 5.0, or at least 7.0, or at least 10.5, or at least 13.0. Tramm further teaches, in column 5, lines 30-45, the relationship between flow rate and K factor and flow pressure. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have provided the sprinkler of Fischer with the range of K-factors (greater than 9) as taught by Tramm to provide a specific flow rate depending on pressure or to increase flow rate given a specific pressure.

Response to Arguments

8. Applicant's arguments filed April 9, 2009 have been fully considered but they are not persuasive.

Applicant does not appear to raise new issues.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher S. Kim whose telephone number is (571) 272-4905. The examiner can normally be reached on Monday - Friday, 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Len Tran can be reached on (571) 272-1184. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Christopher S. Kim/
Primary Examiner, Art Unit 3752

CK